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ABSTRACT

As rural schools prepare for the inclusion of students with disabilities in general classrooms, teachers must be equipped to modify curriculum and adapt classroom environments. This paper reports the results of an analysis of a series of instructional seminars for their applicability to curriculum and classroom environment adaptation. The series was developed by Oklahoma State University (OSU) to provide instructional skills to university teachers who do not have professional training in pedagogy. The series is being put online to expand access to a larger number of faculty, including rural teachers. About half of the program's 30 two-hour modules are currently online. The analysis identified effective instructional strategies that can be adapted by teachers to meet the needs of diverse learners. The strategies and underlying principles cover 17 areas: instruction (teacher attitudes, behavior, and classroom communication); student production (creating products that are authentic and have authentic audiences); psychologically secure environments; motivation; success; student expectations; scaffolding (learning assistance, cues, and support provided by teacher or peers); respect; adaptation to student abilities; prerequisite skills (ensuring that each student has the skills needed to learn new content); group activities; student choice of activities; optimal level of learning; learning communities; problem solving; questioning techniques; and appropriate assessments. The Web site address of the OSU instructional seminars is included. (TD)

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STRATEGIES FROM INSTRUCTIONAL EFFECTIVENESS APPLICABLE TO TRAINING REGULAR TEACHERS FOR INCLUSION

During the 1980s, the educational movement of "regular education initiative" (Will, 1986) started the trend to place students with disabilities in classrooms with their peers without disabilities. The more recent movement, inclusion or full inclusion, is the process of placing students with disabilities entirely in the regular classroom (Kauffman & Hallahan, 1995). Inclusion is considered a civil right and promotes equity (Stainback & Stainback, 1990), is believed to reduce the stigma for students with disabilities (Kliewer & Biklen, 1996) and provides efficient content learning (Raynes, Snell, & Sailor, 1991). Opponents of full inclusion maintain that a continuum of service options is necessary to meet the least restrictive environment clause of IDEA (Kauffman, 1995), that teachers are not prepared for full inclusion (Scruggs & Mastropieri, 1996), and there is no research to make such drastic and blanket changes (Fuch, Fuch, & Fernstrom, 1993).

As many rural schools prepare for the inclusion of students with disabilities in general classroom, teachers must be equipped to modify curriculum and adapt environments. Often teachers are searching for ideas to apply in their classrooms to experience greater success in meeting the needs of all learners. The purpose of this paper is to report the results of an analysis of a series of instructional seminars for their applicability to curriculum and classroom environment adaptation. The series of seminars were developed to equip university teachers without education in their professional background. The instructional strategies from the Oklahoma State University Instructional Effectiveness Training Program can be accessed on the Internet (http://home.okstate.edu/homepages.nsf/toc/ieptocpc1 & http://home.okstate.edu/homepages.nsf/toc/ieptocpc2) by any teacher and adapted to meet the needs of learners of all ages. Admittedly, the adaptation of curriculum is a difficult process, but where these strategies are implemented, teachers will succeed in turning such information into working appropriately for themselves.

Background of the Instructional Effectiveness Program

The Instructional Effectiveness Training Program (IETP) at Oklahoma State University was established in 1990 with the assistance of a Regents' grant to improve instruction, retain students, and assist with faculty professional development. The program was designed to provide teaching assistants and junior faculty with instructional skills. Many professors or teaching assistants at comprehensive universities do not typically have professional training in pedagogy. The program began by providing staff development in six areas, each consisting of a two-hour presentations. Over the last decade of program evaluation, student evaluation and institutional assessment, the IETP has grown to thirty two-hour presentations. In the past eleven years, over 1800 teaching assistants and more than 200 faculty members were trained.

In the past three years the IETP was adapted from a classroom presented seminar series to include an online series of asynchronous, product based seminars. As a result of evaluation data, online development was implemented to expand the number of people who might benefit from the abstracted instruction in educational strategies, both in the number of faculty and faculty who teach at other levels. The belief was that university and other school faculty may access instructional information online more frequently than they would attend presentations where they would be grouped with graduate students. Additionally, online instruction is a service to those teachers who live in rural areas.

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Currently the IETP provides presentations in several areas. About half of these are available online with the remaining online teaching modules scheduled to be completed by the end of 2000. The IETP consists of the following modules: Introduction to Developing Instructional Effectiveness; Developing Teaching Portfolios; Developing a Psychologically Secure Environment; Creating Community in the Classroom; Student Learning Styles and Differences in Instruction; Identifying and Retaining At-risk Students; Characteristics of Adult (Non-Traditional) Learners; Working with Culturally Diverse Students; Classroom Motivation; Collaborative and Cooperative Learning; Designing Instructional Content: Traditional Instructional Design; Designing Instructional Content: Constructivist Instructional Design; Assessment, Evaluation & Measurement; Writing Items for Appropriate Assessment; The Lecture; Active Learning Processes; Conducting Discussion Classes; Conducting Laboratory Classes; Problem Based Learning Processes; Classroom Questioning Techniques; Teaching Technical Skills; Planning Instructional Lessons; Developing Visual Presentations; Using the Library, Databases and the Internet; Examining Alternative Grading Systems; Construction of an OSU (Traditional) Syllabus; Creating A Web Syllabus; Creating a Collaborative Online Syllabus; Dealing with Problems and Classroom Disruptions; and The First Day of Class.

Method and Results

From an analysis of the series of seminars developed for the IETP, seventeen (17) essential and effective instructional strategies were extracted. The analytic criteria to be considered an essential and effective instructional strategy were that each strategy is (1) theory or research support its use; (2) extensive training is not necessary to implement; (3) teachers in rural areas can self evaluate with a limited number of outside resources; and (4) implementation results in curriculum modification and environmental adaptation. The seventeen areas are summarized herein.

Instruction.

Teachers must come to understand that much about what they do is based on attitude and belief. In the IETP, these ideas are referenced as those essential attitudes upon which effective instruction rests. Attitudes may not result in immediate action but are things which the aware teacher should recognize and which should be taken into account when teaching students with diverse ability from diverse backgrounds and arranging appropriate learning environments. Some of the basic attitudes are:

- Learning is concrete and is based on experience.
- Experiences occur in context, or learning is often context dependent.
- Knowing what one does not know leads to learning to fill in the gaps in one's knowledge.
- The teacher can only facilitate the learning that the learner is motivated to attempt.
- Knowledge must be created from information that is relevant to the learner.
- Good problems involve situations that are perceived as real by the learners.
- The presence of colleagues extends one's own abilities/
- Progress is monitored by observing what others do or are capable of doing
- Students who lack prerequisite skill can only learn if the teacher is willing to take the time to teach the knowledge and skills that are needed.
- Male and female students talk and work differently.
- Effective teachers reflect on their own practice of teaching.

The actions and behaviors of teachers who remind themselves of these attitudes change as each portion of instruction is monitored and evaluated. Starting a lesson with significant cues allows a teacher to acquire student's attention using sufficient stimulation to provoke high levels of performance. Effective teachers provide as many examples as possible, using prompts, links, guides, and structures so that the learner can readily identify

what is to be learned and how it relates to what is already known. Teachers will break tasks down to make them accomplishable and help students develop a plan of action for the accomplishment of each task.

Other important instructional actions include providing rationale for how learning relates to experience. Any classroom rules should be explained; however, reduce teacher control to improve learner confidence and responsibility. Listen carefully to what all students are trying to say. Language often acts as a barrier for students from other cultures or backgrounds. There are many reasons why cultures clash in classroom communication. Perhaps there are accents or dialects, perhaps the meaning of words differs, or perhaps finding the right words for the school culture is difficulty when under pressure.

Student Production

Product based recommendations throughout the IETP focus the orientation of teaching and learning on the creation of products that are authentic and which have authentic audiences. The process is a constructivist approach with the creation of new, innovation and original work from each student. This focus of learning often represents a significant change from what is provided traditionally in classrooms. To move to authentic products and audiences, teachers provide real-world opportunities for product based learning. Teachers might consider showing learners real life applications of the learning content.

The more difficult portion of authentic product development is arranging for a real audience. A real audience means the display of student efforts before an audience that hold authentic interest in the product. Other students in the class are often a contrived audience, a result of having a similar assignment. If the learning and the satisfaction are to be authentic, public displays of performance are used. For example, submitting papers to be published, conducting poetry readings at the public library, or submitting work to various competitions or contest are considered authentic audiences. All students should have an equal chance of "looking good."

Psychologically Secure Environments

The concept of the psychologically secure environment focuses on the safety needs of the students. The essential theoretical concepts are adapted from Maslow. If the student does not feel secure it is unlikely that that the student will reach out and try to develop independence, risk taking, problem solving, etc. The recommendations in IETP focus on ways to make the environment more secure in the eyes of the student. Treat students with dignity and respect. Accept students as valuable, worthwhile human beings, although you may have to reject particular behaviors. Provide a psychologically secure environment where it is safe to take risks and easy to trust. Make the environment psychologically secure for slower readers, limit the amount of reading, make alternative assignments, provide books on tape, etc.

The emotional response of students must be anticipated for each comment made in classes. Recognize that students who are afraid of embarrassment or ridicule are unlikely to participate in the discussion no matter what the incentives. Insure that students are not laughed at, humiliated, or made to look stupid in front of their peers. Avoid ridicule by the instructor, peers, or implied in the publication of student developed information/ projects. When a learner is ridiculed, it causes a negative emotional reaction that leads either toward withdrawal or aggression. Reduce the possibility of putting students at risk by avoiding conditional acceptance, reducing fear, and by increasing peer interaction. Provide safe learning environments where students have access to the rewards of learning without threat of humiliation, excessive challenge, physical or psychological violence. Keep disagreements civil and unheated. Do not tolerate peer attacks on beliefs and values. Empower students by recognizing and incorporating their diversity into the learning. Understand that when a student's expectations are violated, the classroom becomes an unsafe place.

Motivation

There are a number of things which teachers recognize related to motivation of all learners. Some of these items follow. All behavior is motivated and everyone is motivated in some way. Learning should be fun. Students are motivated by their historical experience with a topic. The more confidence and satisfaction students have experienced, the more likely they are to persist when they are trying to do something that does not immediately yield to their attack. Challenge motivates.

Classroom rules and norms are threatening for some students. Provide choices or alternatives whenever possible. It is hard to motivate unprepared students. Many students who fear to fail respond by failing to try. Learning communities motivate and include. Different cultures use different motivators.

Competition is a metaphorical hit for anyone who does not win. Avoid forcing students to compete for a limited number of rewards. Everyone wants to succeed. If students cannot succeed because of limited opportunity, many will opt not to try. Tell students that they possess the skills and competencies to successfully accomplish the learning goals, to improve their motivation. Foster the belief that competence or ability is changeable, controllable aspect of development. Promote motivation by helping students predict success

Success

Plan for success for each learner. Look for materials, which are not threatening; but, are student-controlled, and self-reinforcing. Help learners see that effort brings success. Typically providing choices in a range of difficulty levels does this. Different difficulty levels allow different students to find mid-range challenges. Allow students to track their own progress so that they can be sure they are doing what is necessary. Knowing where you are is extremely important when rewards are external and are applied by others rather than by one's self. Provide frequent feedback either peer or instructor both for recognition of work well done and for correction to improve products.

Consider Student Expectations

Expectations relate to what the student expects in the learning environment. For example, a student who expects to fail would be foolish indeed to waste time trying to succeed. Attend to the expectations of all students, especially when they conflict with yours. Expectations can be changed longitudinally by continued incremental success in areas that previously yielded only failure, especially for younger children. Remember the attitude that student expectations determine success or failure. Spell out all of your expectations in the directions to the students. Only some learners are ready to learn at any given level.

Scaffolding

Scaffolding is the process through which the teacher provides cues, assistance, and supports needed by the student to be able to accomplish a task. Scaffolding is a process that can be thought of metaphorically, like having training wheels on a bicycle. Scaffolding must be provided as is necessary for the learner to absorb the new information and transform it. If the learner is unable to assimilate and accommodate the new information, there is a period of coaching or apprenticeship where the facilitator and the learner think conjointly. Develop a class climate that facilitates the use of scaffolding. Provide appropriate scaffolding to insure that students will meet our high standards as they are reaching for success. Provide scaffolding through coaching. Provide scaffolding to assist learning by others (teachers or peers) to acquire knowledge or skill that cannot be acquired without assistance at that point. Provide supervised and unsupervised practice, with scaffolding available, to ensure that skills are acquired.

Respect

Teachers who show respect for learners create a learning environment that is safe. The suggestions here show different facets of respect in the learning environment. Respect students' beliefs, experiences, attitudes, abilities, and goals. Treat each student as an individual to prevent unnecessary anger or fear. Teach students to value diversity to support learning communities. Speak up promptly if a student makes a distasteful remark, even jokingly. Confront racial slurs or denigrating jokes both inside and outside the classroom. If you think a joke may offend someone, then don't tell it or tolerate others telling it.

Adaptation

Adaptations reflect ways in which the teacher can change the learning environment to make a learner more successful. For rural students with disabilities, this may mean employing such strategies as adapting ideational density, reading level, presentation speed, etc. Determine the acquisition level of students so that instruction level can be adjusted. Use the learner's strengths to insure that must know information is acquired. Provide differential treatments based on their ability for those with different aptitudes or abilities. Individual students can be informed about the areas in which they do not have needed prerequisites. Provide supplemental instruction in all areas where there are skill deficiencies before the student is asked to use the skills in learning of new content. High grades should not be restricted to fast, historically knowledgeable learners. Match cognitive style to learning mode to avoid frustration, increased effort expenditure, and boredom. Adapt the content for the learner who reads below grade level the content will need to be adapted by finding alternative text or rewriting the content at a lower level of conceptual density.

Provide alternative approaches. Doing the same thing over, after the approach has failed is inappropriate. Teachers must do more than say try harder, they must show students how to try *differently*. Provide variable amounts of time. Many more students succeed if given time. This is a competency approach that says that the speed with which one learns does not affect the final outcome if the content is learned effectively. Proceed step by step through the details that need to be absorbed in order to acquire skills. Put key words on the board, underline important sections or use highlighters. Recopy notes in colors. Tape record lesson or notes for relistening later.

Prerequisite Skills

Preassessment is always necessary if grades are to be meaningful and if students are to have a chance at meaningful learning. Students who are deficient in prerequisites are usually deficient for one of three reasons 1) inappropriate advising, 2) lack of instruction, or 3) previous poor learning experiences in the content area. Understanding is determined by the previous experiences of the learner, past knowledge and the ways in which previous information has been stored. Assume that the student is responsible for his/her own learning. Students will learn what they want to learn, assuming that they have the prerequisites in place. From this perspective the learner is responsible.

Many students fail because they lack prerequisite skills. Assess student's previous success/failure history or allow them to choose their own goals. Provide prerequisite skills when they are needed for students who do not have assumed prerequisite skills. These students will be at risk to the extent that these needed skills impede their performance. Provide supplemental instruction in all areas where there are skill deficiencies before the student is asked to use the skills in learning of new content.

Group Activities

Group activities are ways for teachers to include all students. Provide collaborative group activities. Encouraged students who feel comfortable in their understanding of the material to talk about how they organize their knowledge and to share the strategies that they use when they encounter new information. Encourage

learners to try to explain to peers what they do not understand. Promote cognitive flexibility though the use of cases which require learners to apply what they have learned in a simulation of a real world situation.

Choice

A choice of activities is offered to students when teachers want to facilitate students working within their strengths. When students have choices, they will feel more secure and will be more motivated because of the higher probability of success. Stimulate students through the provision of questions that they can choose to answer.

Optimal Level

There is an optimal level for learning for all students. This is the level at which performance is maximized. To reach this level, learners are challenged in the mid-range of difficulty. This level will vary depending on the individual learner. Challenge learners with learning opportunities at an appropriate level. When the learner attempts a task that is not at the optimal level, his or her learning performance is degraded. Approximate the appropriate step size in teaching that will keep the cognitive load low for the student and adjust the step size so that the student is learning easily. Present material in a paced or sequential manner.

Learning Communities

Learning communities are groups learning together through mutual facilitation. This leads to the idea of the learning apprentice. Provide a supportive learning community to improve student success. Provide the social environment for learning. Much knowledge is constructed in social environments where people interact.

Younger learners learn what society considers to be socially appropriate behavior. Allow more experienced students to create material designed to help less learning sophisticated students. Create learning communities where students are not pitted against each other in the classroom or isolated without friends in the classroom.

Problem Solving

One of the major activities in school learning is the solution of problems. Some students may initially experience difficulty in this arena. To assist all students in problem solving some of the following ideas may be applicable.

- Foster openness to new ideas.
- Encourage students to generate many, varied and unusual ideas.
- Model suspending judgment.
- Teach learners the grammar of problem solving (the process of problem solving in a particular discipline).

The process of problem solving is to first be sure that you understand all the parts of the problem. Talk the problem over with others. Write the problem out in your own words. Have someone else compare the original problem and your summary of the problem to be sure they are the representing the same issues. Learn from your mistakes. Do not get frustrated. Keep a record of what you did. Draw a sketch or diagram. Make a list and look for patterns. Start with the sub-problems you know you can solve. Check your answers.

Questioning Techniques

Questioning techniques range from teachers asking and answering their own questions to teachers listening while students ask and answer questions among each other. To encourage discussion that is based on

innovated, productive, and creative thinking, the teacher must restrict providing positive reinforcement for those answers that she or he considers better than others. The reinforced response will shape every answer provided and individual creativity is lost. Teachers who ask questions to promote thinking will ask open questions, seek variety in responses, encourage student-to-student interaction, accept and attend to all responses, refocus questions to the topic discussed, ask for clarification, and ask for support and reasoning for all responses.

Students should know that any question is permissible and all questions will be answered respectfully. Some questions arise out of confusion and a confused student becomes anxious and is unlikely to learn. This balance between not giving one's own opinion and, at the same time, preventing anxiety is a difficult task.

For content related questions, encourage students to prepare questions while they complete the assignment. Students can formulate questions prior to class anytime reading, math problems, experiments, case studies, journal writing, etc. are assigned. Listen to the questions of students and encourage them to answer their own questions with small amounts of information. Try to help the students develop a solution to the question. In some situations, ask the student to see you after class or defer the question to a more appropriate time, but make sure you come back to it. Propose a plan for finding out, or ask students to develop a plan for finding out. Suggest a resource where the student can check for an answer. Volunteer to find the answer and report back to the class later. Direct students to respond to the questions of others.

Measurement

Some students with disabilities seem to have a number of problems with issues related to measurement and assessment. Several problems are alleviated when tests have appropriate reliability and validity. Validity for diverse learners translates into appropriate assessment about what each student has learned. Other issues can be resolved by ensuring that students understand the testing system. In addition, teachers may wish to use formative tests to identify the specific objectives not yet mastered by each student after initial instruction. Evaluate achievement against the attainment of clearly stated instructional objections. Design assessment so that it is measurement of what the students know rather than a test to see how fast they can demonstrate their knowledge. Return to the attitude that time is important only in testing for skills that require speed, such as typing or sending Morse code.

Summary and Conclusions

The large number of ideas presented in each of the seventeen areas is meant to stimulate thoughtful reflection for each teacher working with students of diverse ability and backgrounds. These strategies are a reminder or a review for many experienced teachers and a introduction or new perspective for some. Teachers may want to establish a dialogue with the seminar instructors or others attempting to implement ideas in a specific area and reflect on professional development.

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